REMARKS

Applicants appreciate the thorough examination as reflected in the Official Action mailed March 2, 2004. Applicants appreciate the indication of allowable subject matter in CLaims 10, 12-13 and 15-17 and the allowance of Claim 20. Applicants have amended Claim 1 to incorporate the recitations of Claim 10 and have, accordingly, cancelled Claim 10. Applicants have written Claims 6, 18, 13 and 17 in independent form. Applicants have cancelled Claims 11 and 15 and amended Claim 16 to depend from Claim 14. Thus, Applicants submit that Claims 1-5, 9, 12-14 and 16-20 are in condition for allowance. The only remaining issues are the patentability of Claims 6-8. Applicants submit that these claims are patentable for the reasons discussed below.

The IDS

Applicants wish to bring to the Examiner's attention Information Disclosure Statements filed February 4, 2004, January 20, 2004 and November 5, 2003. Applicants appreciate the return of initialed PTO-1449 forms for Applicants' previous IDS submissions and request the same for the Information Disclosure Statements submitted with the present Amendment. Copies of the PTO-1449 forms for these Information Disclosure Statements filed February 4, 2004, January 20, 2004 and November 5, 2003. Should the Examiner require additional copies of any of the cited references, such copies will be provided on request by the Examiner.

The Section 102 Rejections

Claims 1, 4, 8-9, 11, 14 and 18-19 stand rejected under 35 U.S.C. § 102 as anticipated by United States Patent No. 6,028,012 to Wang (hereinafter "Wang"). As discussed above, Claim 1 has been amended to incorporate the recitations of Claim 10 that was indicated as containing allowable subject matter. Accordingly, Claims 1, 4, 9, 14, 18 and 19 are in condition for allowance. Claim 11 has been cancelled. Claim 8 has been written in independent form and has been amended to clarify that the anneal in a hydrogen containing environment is not carried out as a separate processing step. Thus, Claim 8 recites:

8. A method of forming an insulator in a silicon carbide electronic device, comprising:

fabricating a nitrided oxide layer on a layer of silicon carbide; and

annealing the nitrided oxide layer in an environment containing hydrogen;

wherein the step of annealing the nitrided oxide layer comprises heating the nitrided oxide layer to a temperature of greater than about 400 °C in a hydrogen containing environment **as part of a processing step other than a processing step that is only an anneal of the nitrided oxide layer in a hydrogen containing environment**.

Applicants submit that at least the highlighted portion of Claim 8 is not disclosed by the cited portions of Wang.

In particular, Wang describes the water vapor anneal as a separate processing step such that the anneal is only an anneal in a hydrogen containing environment. See Wang, col. 3, lines 64-67 and Figure 3. The portions of Wang cited in the Official Action do not describe an anneal in a hydrogen containing environment as part of a processing step another processing step but describe a separate water vapor anneal. Accordingly, Applicants submit that Wang does not disclose or suggest incorporating an anneal in a hydrogen containing environment "as part of a processing step other than a processing step that is only an anneal of the nitrided oxide layer in a hydrogen containing environment" as is recited in Claim 8.

The Section 103 Rejections

Claims 2-3 stand rejected as obvious under 35 U.S.C. § 103 based on the combination of Wang and Japanese published application JP 2000-252461 to Arai *et al.* (hereinafter "Arai") and Claims 5-7 stand rejected based on the combination of Wang and the article Xu *et al.*, "Improved Performance and Reliability of N2O Grown Oxynitride on 6H-SiC," IEEE Electron Device Letters, Col. 21, no. 6, June 2000, pp. 298-300 (hereinafter "Xu"). Applicants submit that Claims 2-3 and 5 are patentable at least as depending from a patentable base claim. Applicants submit that Claims 6 and 7 are separately patentable over Wang and Xu.

Claim 6 recites:

6. (Currently Amended) A method of forming an insulator in a silicon carbide electronic device, comprising:

fabricating a nitrided oxide layer on a layer of silicon carbide; and
annealing the nitrided oxide layer in an environment containing hydrogen;
wherein the step of fabricating a nitrided oxide layer comprises the steps of:
fabricating an oxide layer; and
fabricating a nitride layer on the oxide layer so as to nitridate the oxide layer on which the nitride layer is fabricated.

Applicants submit that at least the highlighted portion of Claim 6 is not disclosed or suggested by the cited portions of Wang and/or Xu.

In particular, Claim 6 recites that a nitride layer is fabricated on an oxide layer to nitridate the oxide layer. However, neither Wang nor Xu describes such a process.

Applicants respectfully submit that Xu describes growth of a nitrided oxide layer, for example, in a pure N_2O, or annealing an oxide in N_2O, not formation by separate formation of an oxide layer and formation of a nitride layer on the oxide layer. Likewise, Wang describes forming an SiO_2 layer on the substrate but does not describe forming a nitride layer on the SiO_2 layer. In light of the above discussion, Applicants submit that neither Wang nor Xu disclose or suggest annealing a nitrided existing oxide layer in a hydrogen containing environment as recited in Claim 20. Accordingly, Applicants submit that Claim 20 is patentable over the cited references.

While Applicants submit that Claim 7 is patentable as depending from a patentable base claim, Applicants also submit that Claim 7 is separately patentable over Wang and Xu. For example, Claim 7 recites that "the step of annealing the oxide layer in an environment containing hydrogen is provided substantially concurrently with the step of fabricating the nitride layer." In rejecting Claim 7, the Official Action states that "performing two steps simultaneously, which have previously been performed in sequence, is considered to be obvious." Official Action, p. 4. However, neither Wang nor Xu suggest that the oxide growth and the hydrogen anneal could be carried out simultaneously. As such, Applicants submit that there would be no motivation to combine Wang and Xu in the manner recited in Claim 7 and no expectation of success even if combined. Accordingly, Applicants submit that Claim 7 is separately patentable over Wang and Xu for at least these additional reasons.

CONCLUSION

In light of the above discussion, Applicant submits that the present application is in condition for allowance, which action is respectfully requested. If, in the opinion of the Examiner, a telephonic conference would expedite the examination of this matter, the Examiner is invited to call the undersigned attorney at (919) 854-1400.

It is not believed that an extension of time and/or additional fee(s)-including fees for net addition of claims-are required, beyond those that may otherwise be provided for in documents accompanying this paper. In the event, however, that an extension of time is necessary to allow consideration of this paper, such an extension is hereby petitioned under 37 C.F.R. §1.136(a). Any additional fees believed to be due in connection with this paper may be charged to our Deposit Account No. 50-0220.

Respectfully submitted,

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CERTIFICATE OF MAILING

I hereby certify that this correspondence is being deposited with the United States Postal Service as first class mail in an envelope addressed to: Mail Stop Amendment, Commissioner for Patents, P.O. Box 1450, Alexandria, VA 22313-1450, on July 7, 2004.

Traci A. Brown Date of Signature: July 7, 2004